

AMENDMENTS TO THE SPECIFICATION

Page 3, please amend the paragraph commencing at line 3 by rewriting same to read as follows:

In the apparatus of FIG. 1, the compressed image data input is supplied via the code buffer 101 to the data-compressing/analyzing section 102. The data-compressing/analyzing section 102 analyzes the compressed image data, thereby obtaining data that will be used to expand the image data. The data thus obtained is supplied to the variable-length decoding section 103, together with the compressed image data. The variable-length decoding section 103 performs variable-length ~~encoding~~ decoding, i.e., a process reverse to the variable-length encoding that has been performed to generate the compressed image data. In the decoding section 103, however, only coefficients may be decoded and no other process may be carried out until the EOB (End of Block) is detected. These coefficients are required in a compression inverse discrete-cosine transform (4 X 4) section 105 or a compression inverse discrete-cosine transform (field separation) section 106, in accordance with whether the macro block is of field DCT mode or frame DCT mode. FIG. 2A and FIG. 2B show two operating principles the variable-length decoding section 103 assume to decode MPEG2-image compressed data (bit stream) that has been generated by zigzag scanning. More precisely, FIG. 2A depicts the operating principle that the decoding section 103 assumes to decode the compressed data in field DCT mode, and FIG. 2B illustrates the operating principle that the decoding section 103 assumes to decode the compressed

data in frame DCT mode. FIG. 3A and FIG. 3B show two operating principles the variable-length decoding section 103 assume to decode MPEG2-image compressed data (bit stream) that has been generated by alternate scanning. To be more specific, FIG. 3A depicts the operating principle that the decoding section 103 assumes to decode the compressed data in field DCT mode, and FIG. 3B illustrates the operating principle that the decoding section 103 assumes to decode the compressed data in frame DCT mode. The numbers in FIGS. 2A, 2B, 3A and 3B indicate the order in which the data items have been generated by scanning. The data decoded by the variable-length decoding section 103 is supplied to the inverse quantization section 104. The inverse quantization section 104 performs inverse quantization on the input data. The data generated by the section 104 is supplied to the compression inverse discrete-cosine transform (4 X 4) section 105 or the compression inverse discrete-cosine transform (field separation) section 106. The section 105 or 106 performs inverse discrete-cosine transform on the input data.

Page 6, please amend the paragraph commencing at line 11 by rewriting same to read as follows:

As shown in FIG. 5, the compression inverse discrete-cosine transform (field separation) section 106 first performs 8 X 8 inverse discrete cosine transform (IDCT) on the discrete cosine transform coefficients y1 to y8 contained in the compressed image data (bit stream) that is the input data. Data items x1 to x8, or decoded data items, are thereby generated. Then, the section

106 separates the data items  $x_1$  to  $x_8$  into ~~two~~ first field data and second field data. The first field data consists of the data items  $x_1$ ,  $x_3$ ,  $x_5$  and  $x_7$ . The second field data consists of data items  $x_2$ ,  $x_4$ ,  $x_6$  and  $x_8$ . Next, the section 106 performs  $4 \times 4$  discrete cosine transform (DCT) on the first field data, generating discrete cosine transform coefficients  $z_1$ ,  $z_3$ ,  $z_5$  and  $z_7$ , and on the second field data, generating discrete cosine coefficients  $z_2$ ,  $z_4$ ,  $z_6$  and  $z_8$ . Further, the section 106 performs  $2 \times 2$  inverse discrete cosine transform on only the lower ones of each field data. Thus, compressed pixel values  $x'_1$  and  $x'_3$  are obtained for the first field data, and compressed pixel values  $x'_2$  and  $x'_4$  are obtained for the second field data. Then, the pixel values are subjected to frame synthesis, generating output values  $x'_1$ ,  $x'_2$ ,  $x'_3$  and  $x'_4$ . In practice, the pixel values  $x'_1$ ,  $x'_2$ ,  $x'_3$  and  $x'_4$  are obtained by effecting a matrix algebraic operation equivalent to this sequence of operations, on the discrete cosine transform coefficients  $y_1$  to  $y_8$ . The matrix [FSI] obtained by calculation using addition theorem is given as follows:

Page 19, please amend the paragraph commencing at line 13 by rewriting same to read as follows:

If the image represented by the compressed image data (bit stream) input may consists of  $1920 \times 1080$  pixels, the image data output from the video memory 110 is composed of  $960 \times 1080$  pixels. In order to output the image data to, for example, a display apparatus for displaying a  $720 \times 480$  pixel image (aspect ratio of 16:9), pixel data items must be extracted to reduce the

number of pixels to  $3/4$  in the horizontal direction and to  $4/9$  in the vertical direction. The frame-converting section 111 extracts pixel data items in this manner, thereby to change the size of the image frame.

Page 29, please amend the paragraph commencing at line 5 by rewriting same to read as follows:

The picture-type determining section 18 supplies the data about an I/P picture to the MPEG2-image data decoding section (i.e., I/P picture 4 X 4 8 down-decoder) 19, but discards the data about a B picture. Thus, the section 18 converts the frame rate.

Page 30, please amend the paragraph commencing at line 2 by rewriting same to read as follows:

The output of the MPEG2-image data decoding section (i.e., I/P picture 4 X 4 down-decoder) 19, or interlaced-scan pixel data, is input to the scan-converting section 20. The scan-converting section 20 preserves one of two fields and discards the other of the two fields. The section 20 then performs twofold interpolation in the field preserved, thereby converting the interlaced-scan pixel data to sequential-scan pixel data as is illustrated in FIGS. 14A, 14B and 14C. More specifically, the section 20 preserves only the pixels of the first field are preserved, while discarding the pixel values of the second field, as is shown in FIGS. 14A and 14B. Next, the scan-converting

section 20 carries out twofold interpolation in the first field (i.e., preserved field) as illustrated in FIG. 14C, thereby generating interpolated pixels gc. Thus, the scan-converting section 20 converts the interlaced-scan pixel data to sequential-scan pixel data. The section ~~19~~ 20 outputs the sequential-scan pixel data.